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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/010,601

12/06/2001

Ismail Adnan Lakkis

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04/14/2006

BAKER & MCKENZIE LLP  
PATENT DEPARTMENT  
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EXAMINER

NGUYEN, HANH N

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/010,601

Applicant(s)

LAKKIS, ISMAIL ADNAN

Examiner

Hanh Nguyen

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Response filed on 1/27/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-87 is/are pending in the application.
- 4a) Of the above claim(s) 1-32 and 81-87 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 33-40, 46-48 and 54-80 is/are rejected.
- 7) ☒ Claim(s) 41-45 and 49-53 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

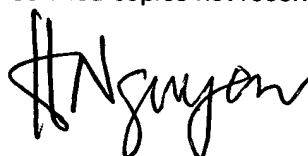
**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.



HANH NGUYEN  
PRIMARY EXAMINER

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/22/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

The drawings are objected to because

Sub channels 200 in fig.2 should be changed to sub channels 202 for consistency to the specification on page 11, paragraphs [045,046 and 047].

As indicated by specification, on page 15, paragraph [055], packet 504 is not labeled in fig.5B.

S/P converter 1502 in fig.15 should be changed to S/P converter 1504 for consistency to specification in page 33, paragraph [0101].

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Objections***

Claims 33, 40, 48, 66 are objected to because of the following informalities:

In claims 33, 40, 48, "device" on line 4 should be "devices" .

In claim 66, line 2, "turn on and of" should be changed to "turn on and off".

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 59 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 59, why is the first splitted bit stream not delayed by half a symbol while the second splitted bit stream is delayed ?.

It is noted that most of claims 33-80 comprise the term " configured" which creates a lacking of positive meanings in these claims. Applicant is required to amend the claims in such a way that the term " configured" should be deleted or replaced with other amended languages. See MPEP 2111.04.

Claim 46 recites the limitation "the sub-block repeater, sub-block scrambler and block repeater" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 33, 34, 35, 36, 37, 38, 39, 40, 47, 48, 50, 54, 61, 62 and 63 are rejected under 35 USC 103(a) as being unpatentable over Urs et al. (US pat. 6,529,488 B1) in view of Nakagawa et al. (US pat. 6,256,508 B1).

In claim 33, Urs et al. discloses a transmitter (transmitter 903; fig.9) comprising a modulator (modulator 905; fig.9) configured to perform time division modulation or frequency division modulation on each of the plurality of bit streams (modulator 905 performs modulations by using either TDM or FDM on each of frequency allocations FA1 to FA8; see col. 9, lines 50-65 and fig.10, steps 1001, 1003 and 1009; col.10, lines 55-65); and a summer (fig.14, summer 1405) configured to sum the plurality of bit streams into a single transmit signal (summer 1405 adds signal 1 and signal 2 into a dual signal; see col.14, lines 30-32). Urs et al. does not disclose a transmitter comprising a serial-to-parallel transformer configured to transform a single serial bit stream comprising messages for a plurality of communication device into a plurality of bit streams. Nakagawa et al. discloses, in fig.7, a transmitter 10 (see fig.5). The transmitter 10 comprises a S/P converter 31 (S/P transformer) that converts serial signals of into n parallel signals; see col.8, lines 25-30. Therefore, it would have been obvious to one ordinary skills in the art to implement the S/P converter 31 into the transmitter of Urs et al. in order to convert serial signals comprising frequency allocations into multiple bit streams. The motivation is to

simultaneously transmit multiple frequency allocations in a single wideband frequency channel to the multiple receivers; each receiver is allocated a portion of the frequency range. This technique save system resources during transmissions.

In claims 40, 48, as disclosed in the rejection of claim 33 above, Urs et al. further discloses a filter ( fig.13, filter 1327, filter 1323 and filter 1319) configured to apply a required pulse shaping to each of plurality of bit streams (fig.13, signals 1333, 1335 and 1337; col.13, lines 65 to col.14, line 10) ; and a frequency shifter ( fig.14, frequency shifter) configured to shift each bit stream in frequency by a required amount ( shift signal 1 by one half BW of signal 1 and shift signal 2 at minus one half BW of signal 2; see col.14, lines 12-30) .

Claims 62, as disclosed in the rejection of claim 33, Urs et al. disclose, in fig.12; step 1205, a frequency division multiplex modulation is used, multiple frequency allocations are transmitted in a composite frequency range to receivers; see col.12, lines 3-10; therefore a frequency encoder is inherent to configured to encode information from more than one bit streams onto each of frequencies corresponding to a plurality of sub-channels.

Claims 55, 56, 57, 58, 60, 64, 65, 66, 67, 68, 69, 70 and 71-80 are rejected under 35 USC 103(a) as being unpatentable over Urs et al. (US pat. 6,529,488 B1) in view of Nakagawa et al. (US pat. 6,256,508 B1) and further in view of Protor, Jr. (US Pat. 6,785,323 B1).

In claims 55 and 65, besides what are disclosed by the rejection in claims 33 and 62, Urs et al. does not disclose a rate controller configured to adjust the overall data rate. Protor, Jr. discloses , in fig.2, the capacity manager 55 ( rate controller) adjusts value of code rate signal 60 by selecting a different code rates under different conditions of a corresponding traffic channel; see col.5, lines 26-60. Therefore, it would have been obvious to one ordinary skills in

the art to implement the capacity manager 55 into the transmitter of Urs et al. so that coding rates of different bit streams are adjusted accordingly. The motivation is to provide users clear channels by adjusting coding rates in according to channel condition.

In claim 56, 60, 67, the limitation of this claim has been addressed in claim 55.

In claim 66, as disclosed in claims 55, 65, Protor, Jr. discloses, in fig.2, the capacity manager 55 ( rate controller) adjusts value of code rate signal 60 by selecting a different code rates under different conditions of a corresponding traffic channel; see col.5, lines 26-60. It is inherent that once the rate controller ( capacity manager 55) can adjust the coding rates, the coding rates can be adjusted to zero (turn off) or increase (turn on).

In claim 71, besides what are disclosed in claims 33, 40, 55 and 65, Urs et al. does not disclose a parallel-to-serial transformer configured to transform the plurality of bit streams into one single serial bit stream; and an equalizer performing equalization on each bit stream. Nakagawa et al. discloses a parallel-to-serial transformer configured to transform the plurality of bit streams into one single serial bit stream ( see fig.8, P/S converter 11). Protor, Jr. discloses an equalizer performing equalization on each bit stream ( Fig.2, equalizer 62 providing equalization of individual chips of received signal ; see col.6, lines 13-16). Therefore, it would have been obvious to one ordinary skills in the art to combine the teachings of Protor, Jr and Nakagawa et al. with that of Urs et al. so that a receiver is able to synchronize to received signal from the transmitter.

In claims 34 and 50, as disclosed in claim 33, Urs et al. does not disclose a scrambler configured to scramble each of the plurality of bit streams; an encoder configured to encode each of the plurality of bit streams and an interleaver configured each of the plurality of bit streams.

Protor, Jr. discloses a base station 12 ( transmitter) comprising encoder 42 (see fig.2) that codes input signals ( encode input streams) at rates of  $1/4$  ,  $1/3$  ,  $1/2$  and  $7/8$  ( see col.4, lines 50-60. Nakagawa et al. discloses a broadcast transmitter ( see fig.10) comprising a coder 102 and coder 105; and an interleaver 104. Therefore, it would have been obvious to one ordinary skilled in the art to combine the teachings of Protor, Nakagawa with that of Urs et al. to arrive at the claimed invention. The motivation is to ensure that the receiver receive correct information with no error.

In claims 39, 47, 54, 61, 64, 70 and 80, Urs et al. discloses the transmitter is configured to be used in an indoor communication system, and outdoor communication system ( see fig.3, base station 101 communicates with mobile stations 107-111 in wireless), or a line of sight communication system ( see fig.3, base station 101 communicates with mobile station 107-111 as point to multipoint communication).

In claims 37, Urs et al. discloses the modulator is configured to filter each of the plurality of bit streams to provide a required pulse shaping for each of the plurality of bit streams (see fig.13, modulator uses RF filter 1327, adjustable filters 1323 and 1329 to create pulse shaping as shown in signals 1333, 1335 and 1337).

In claims 69, Urs et al. discloses the modulator is configured so that the type of modulation can be programmed ( see fig.12, the device is programmed to modulate allocated resource ( signal) in accordance with modulation schemes, such as FDM, TDM or CDMA; see col.12, lines 5-10) .

In claims 63 and 68, as disclosed in the rejection of claim 34 by Protor, Protor further discloses frequency encoder ( FEC encoder 42) is configured so that the type of frequency encoding ( FEC encoding ) performed is programmable. See fig.2.



In claims 35 and 36, Urs et al. does not disclose a symbol mapper configured to perform symbol mapping on each of the plurality of bit streams; and programmed based on signal to interference measurements. Protor, Jr. discloses coding rates are selected in accordance with inputs from Framer 40 which maps coding rates. See fig.3. As indicated in fig.4, Protor discloses a channel is operating at  $\frac{1}{2}$  rate turbo code will experience error rate of 0.05 (Signal to interference measurements) Therefore, it would have been obvious to one ordinary skilled in the art to combine the teaching of Protor with that Urs et al. so that input signals are mapped to a corresponding coding rate.

In claims 57 and 58, Urs et al. does not disclose rate controller is configured to adjust data rate by encoding  $n$  data streams onto  $m$  channel, where  $m > n$ . Protor discloses capacity manager 55 (rate controller, fig.2) adjusts the coding rates by encoding a signal ( $n$  data stream) from encoder 42 into CDMA signals 46-1 to 46- $n$  ( $m$  channel) (see 5, lines 12-25). Therefore, it would have been obvious to one ordinary skilled in the art to implement the transmitter of Protor for broadcasting multiple coded signals to devices 14.

In claim 38, the limitation of this claim has been addressed in claim 33.

In claims 72-79, the limitations comprises operations of a receiver which are opposed to that of transmitter. Therefore, the methods and the apparatuses limitations in these claims are disclosed in their parent claim 71.

***Allowable Subject Matter***

Claims 41-45, 49-53 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In claims 41 and 49, the prior art does not disclose a sub-block repeater configured to take a sub-block of data from the bit stream and form a new sub-block comprising the original sub-block repeated twice; and a block terminator configured to add a cyclic termination prefix to the new sub-block.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kong et al. ( US pat. 6,700,881 B1 ) ; and Matui ( US Pat. 5,903,556).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Nguyen whose telephone number is 571 272 3092. The examiner can normally be reached on Monday-Friday from 8:30 to 4:30. The examiner can also be reached on alternate

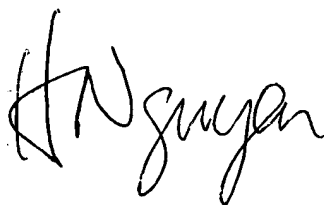
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar, can be reached on 571 272 4088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hanh Nguyen  
Primary examiner

A handwritten signature in black ink, appearing to read 'H Nguyen', with a stylized, cursive script.

**HANH NGUYEN**  
**PRIMARY EXAMINER**